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The Role of the Nervous System in the Causation of Vitiligo.*

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IN disease we find generally that nutrition is, in some degree, more or less perverted; that the normal equilibrium between waste and repair has been destroyed. And the agency which tends to preserve this equilibrium, which acts as the normal regulator of the various functions of the body, resides in the nervous system. So that it may be asserted that nutrition and the perturbations it undergoes are almost always directly dependent upon normal or perverted nerve action, whatever its remote cause may be. And when the great nerve centres or the centres in direct communication with them suffer, there is a corresponding change in the general process of nutrition.

Vitiligo or acquired leucoderma is generally classified by dermatologists as a disease characterized by an atrophy and hypertrophy of the pigment of the skin, the former being central and the later peripheral. If we examine its clinical characteristics we will find that the appearance which it presents is that of a macule or spot of varying size or shape, more generally roundish or ovalish, of a milky white color. This whitish appearance is made much more prominent from the fact that at its periphery there is an increased height of color manifested in a yellowish or brownish discoloration. This latter is sharply defined against the white spot, and gradually fades into the normal skin. The spot itself increases peripherally, slowly or rapidly. It is apparent,

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then, that it really consists in a *displacement* of pigment which is centrifugal, and that the want of coloring matter in the central portion is balanced by its excess in the peripheral part.

We know furthermore that there is, perhaps, no other single organ having such a great extent as the skin and the richness with which it is supplied with glands, blood-vessels, lymphatics and nerves can be very easily demonstrated. We also know that a great many of the diseases of the skin are due directly to nervous influence, organic, functional or reflex; and there is no reason to doubt that impaired or perverted innervation or organic nerve changes may be the cause of a perversion of the nutrition of the skin, and manifested by an improper or perverted distribution of pigment.

Besides we have an analogous condition in the case of discoloration of the skin, due to liver troubles or to uterine diseases, where an excessive development of pigment takes place through reflex action springing from some irritation of a nerve centre.

Cases of vitiligo have been observed from time to time which seemed to point very definitely to a nervous origin. The two following cases, occurring in my own practice, I wish to allude to briefly, as being very pertinent to the subject:

CASE I. W. G——, aged thirty-five, is of a spare build, but has always been in apparent good health. Is of a "nervous temperament" and was considerably troubled by two spots which appeared sometime before consulting me. He was solicitous concerning them because they were increasing in size. At the time he sought my advice the spots were about the size of a silver dime, round and situated on each side of the chin, equidistant from the mesial line. The beard was white at the site of the vitiligo. He was advised to make use of an ascending galvanic current, which he did. He informed me a few months later that the spot on the right side had almost disappeared, and that on the left was considerably improved. At the same time he confessed that he had been negligent in attending to it. This is the

more easy to understand when it is known that he is a physician.

CASE 2. C. M——, aged twenty-eight, is of powerful build, but unfortunately the possessor of what he calls "weak" nerves. There is an instability of the nervous system which is sometimes very distressing in its results to the patient. When first seen, the vitiligo involved a part of the chin, of the neck, of the pre-auricular space, of the eyebrow and of the scalp of the right side. On the chin and scalp, as well as the front part of the neck, the trouble could be seen to be abruptly defined at the median line, being entirely limited to the right half of the face and head. The hair on these different patches was perfectly white. He was given ascending galvanic electrization and local stimulants to apply to the spots. He came to my office rather irregularly for some time and distinct improvement declared itself. After about three months of this irregular treatment, the spots were commencing to regain their normal color, the hair having, to a great extent, ceased to be white. The patient became tired, probably, and ceased coming.

From a limited survey of the literature of the subject, it will be found that but few have recognized a nervous origin for this disease. Cazenave and Schedel* say that the cause is one which cannot be determined. E. Lesser† says that we still lack any explanation, and he is not disposed to attribute any case to nerve action, preferring rather to suppose that symmetrical parts of the skin are equally affected by any morbid process affecting the integument. Dr. A. Harvey Reed‡ considers the disease a purely nervous affection under protest until elucidated more. He has used electricity without success, but fails to state what sort of a current he has employed and in what manner. Morris|| does not discuss the etiology of vitiligo, simply stating that no remedies have been found to remove the patches. Neumann§ whilst

* *Traité abrégé des Maladies de la Peau*, 1828.

† *Ziemssen's Cyclopaedia*, (Wood & Co.), 1885.

‡ *Trans. Ohio State Med. Soc.* 1885.

|| *Skin Diseases*, 1880.

§ *Hand Book of Skin Diseases*. Trans. by Bulkley, 1879.

acknowledging that very innervating diseases, such as typhoid, may cause partial discoloration, laments that in the majority of cases we do not know the cause; Robinson* speaks about in the same strain. Hyde† regards its etiology as obscure "unless the strong probabilities in favor of its occurrence under the influence of perturbed innervation be accepted as conclusive." Piffard‡ thinks that most of the speculations regarding the cause of vitiligo are not provided with a sufficient basis of fact to even render them probable, and yet theoretical considerations would lead him to suggest the use of the galvanic current. Kaposi|| says simply that we are not able to cure vitiligo by any of the means at our disposal. Liveing§ states that well-marked unilateral leucoderma is almost unknown in England. Wilson¶ says that the disease is generally symmetrical. Tilbury Fox** has seen cases where the sensation was blunted, or, at least, we are led to infer this from what he says. He says, furthermore, that he "cannot but think exposure to the sun's rays has much to do with its production, deranging the pigment formation in the skin." Hillier†† makes no comments, whatever, on this disease. Thomas F. Wood‡‡ in describing a case, where almost exact symmetry existed, states that "to say it is due to faulty innervation scarcely brings us to a nearer solution."

On the other hand we find some authors who are not only advocates of the nervous element in the causation of this disease, but unwilling witnesses have placed themselves upon record. Bulkley||| says "I have seen marked benefit from the use of phosphide of zinc and nux vomica." Duhring§§ in his excellent work when speaking of the

*Manual of Dermatology, 1884.

† Diseases of the Skin, 1883.

‡Materia Medica and Therapeutics of the Skin, 1881.

||Hebra and Kaposi. Lehrbuch der Hautkrankheiten, II. 1875.

§Diagnosis of Skin Diseases, 1879.

¶ Diseases of the Skin, 1887.

** Skin Diseases, 1884.

††Hand-book of Skin Diseases, 1870.

‡‡Notes on Leucoderma. Jour. Cut. and Ven. Dis. I.

|||Manual of Diseases of the Skin, 1884.

§§Diseases of the Skin, 1881.

etiology states that "while, as a rule, no satisfactory cause can be offered for its development, it seems to be due to some disturbance of innervation." Leloir and Chabrier* have noted changes in the peripheral nerves in a case of vitiligo and Dejerine† has also made the alterations of the nerves of the skin in a case of vitiligo the subject of a paper.

Thus it is seen that a hasty and superficial glance at a part of the literature of the subject shows quite a diversity of opinion, but it also shows that those who have paid the most attention to the subject and those who have studied this disease, seem to be pretty well agreed that the nervous system has quite a considerable part to play in its production. And to more clearly establish this conclusion, as a legitimate deduction from certain premises, I will recapitulate the arguments upon which it is based:

1. There are analogous cases where pigment loss or disturbance is known to depend upon some functional or organic trouble of the nervous system. Take for example the blanching of hair through mental emotion and the loss of pigment of anæsthetic spots in leprosy. We have here conditions where the relations of cause and effect are very clear.

2. Another somewhat analogous action is where there is an excess of pigment due to nervous influence. This we find well illustrated in chloasma, which is almost always caused by reflex nervous action. In fact there is no other plausible cause given for it. In both these disturbances of pigment, we merely have variations from a certain type of which vitiligo is another variation, the three being types of loss, increase and displacement of the cutaneous pigment. Besides pigmentation may be induced by local irritation, such as cantharides, etc., which act upon the terminal nerves.

3. The distribution of the disease is another very

*Comptes Rendus de l'Académie des Sciences, 1879.

†Note Sur les Altérations des Nerfs de la Peau dans un cas de Vitiligo. Progrès Médical, 1881.

strong presumption in favor of its nervous origin in a considerable number of cases. It is, as a rule, symmetrical and quite often unilateral. I have given marked examples of these two in my cases which, to my mind, are very conclusive upon this point.

4. The concomitant nervous phenomena also seem to corroborate the idea that the cause of vitiligo in many cases is directly traceable to a neurotic origin. We find that the majority of patients having the dermatic affection are either the subjects of some nervous malady or are the possessors of what they themselves term "weak" nerves, and are persons predisposed to, and who easily acquire nervous diseases, besides, the family history generally contains a pretty fair record of nervous troubles.

5. The effects of nervines have been quite marked in some cases. They have never been given a sufficient trial to derive a legitimate conclusion, but all means used to tone the nervous system have always been followed by benefit, more or less marked in the general system and in the skin disease.

6. The use of the galvanic current has been one attended by more than satisfactory results in my hands, and I shall continue to use it in the treatment of vitiligo until I am pretty well satisfied that it is useless. Of course, a few cases cannot determine a therapeutical question; yet, the marked good effects of galvanism, in a few cases, have made me think that the cause of the vitiligo was probably nervous.

7. The nerve alterations found in this disease are marked in some cases. There have been few, if any, investigations, in this direction, and it seemed as if those who were to write upon the subject had agreed to ignore or entirely taboo any possible neurotic origin, and rather ignored this important part of the pathology of the disease.

The few points given above together with a close observance of cases will show that the role of the nervous system in the causation of vitiligo is a considerable one,

and, moreover, that it is more often active than is generally supposed. This is of some importance as it may contribute to an effort on the part of all who see this disease to treat it, and not merely turn away patients with the assurance that nothing can be done for their disease. A new era is dawning upon us. We are learning that, through a better knowledge of etiology and of pathology, a number of diseases, hitherto regarded as incurable, are now entering the domain of the curable. May vitiligo soon be counted with these. At any rate, I would recommend in every case a careful search for a nervous origin and a treatment combining internal nerve tonics with external nerve stimulation, such as the ascending galvanic current, as success or failure will aid, to a great degree, in determining how far the nervous system exerts its influence in vitiligo.
